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U. S. DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

U.S. CHILDREN'S BUREAU

JULIA C. LATHROP, Chief

PRENATAL CARE

BY

MRS. MAX WEST

Bureau Publication No. 4



WASHINGTON
GOVERNMENT PRINTING OFFICE
1921



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LAW ESTABLISHING THE CHILDREN'S BUREAU.

AN ACT To establish in the Department of Commerce and Labor a bureau to be known as the Children's Bureau.

[62d Cong., 2d session. S. 252. Public, No. 116.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established in the Department of Commerce and Labor a bureau to be known as the Children's Bureau.¹

SEC. 2. That the said bureau shall be under the direction of a chief, to be appointed by the President, by and with the advice and consent of the Senate, and who shall receive an annual compensation of five thousand dollars. The said bureau shall investigate and report to said department upon all matters pertaining to the welfare of children and child life among all classes of our people, and shall especially investigate the questions of infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment, legislation affecting children in the several States and Territories. But no official, or agent, or representative of said bureau shall, over the objection of the head of the family, enter any house used exclusively as a family residence. The chief of said bureau may from time to time publish the results of these investigations in such manner and to such extent as may be prescribed by the Secretary of Commerce and Labor.

SEC. 3. That there shall be in said bureau, until otherwise provided for by law, an assistant chief, to be appointed by the Secretary of Commerce and Labor, who shall receive an annual compensation of two thousand four hundred dollars; one private secretary to the chief of the bureau, who shall receive an annual compensation of one thousand five hundred dollars; one statistical expert, at two thousand dollars; two clerks of class four; two clerks of class three; one clerk of class two; one clerk of class one; one clerk, at one thousand dollars; one copyist, at nine hundred dollars; one special agent, at one thousand four hundred dollars; one special agent, at one thousand two hundred dollars, and one messenger at eight hundred and forty dollars.

SEC. 4. That the Secretary of Commerce and Labor is hereby directed to furnish sufficient quarters for the work of this bureau at an annual rental not to exceed two thousand dollars.

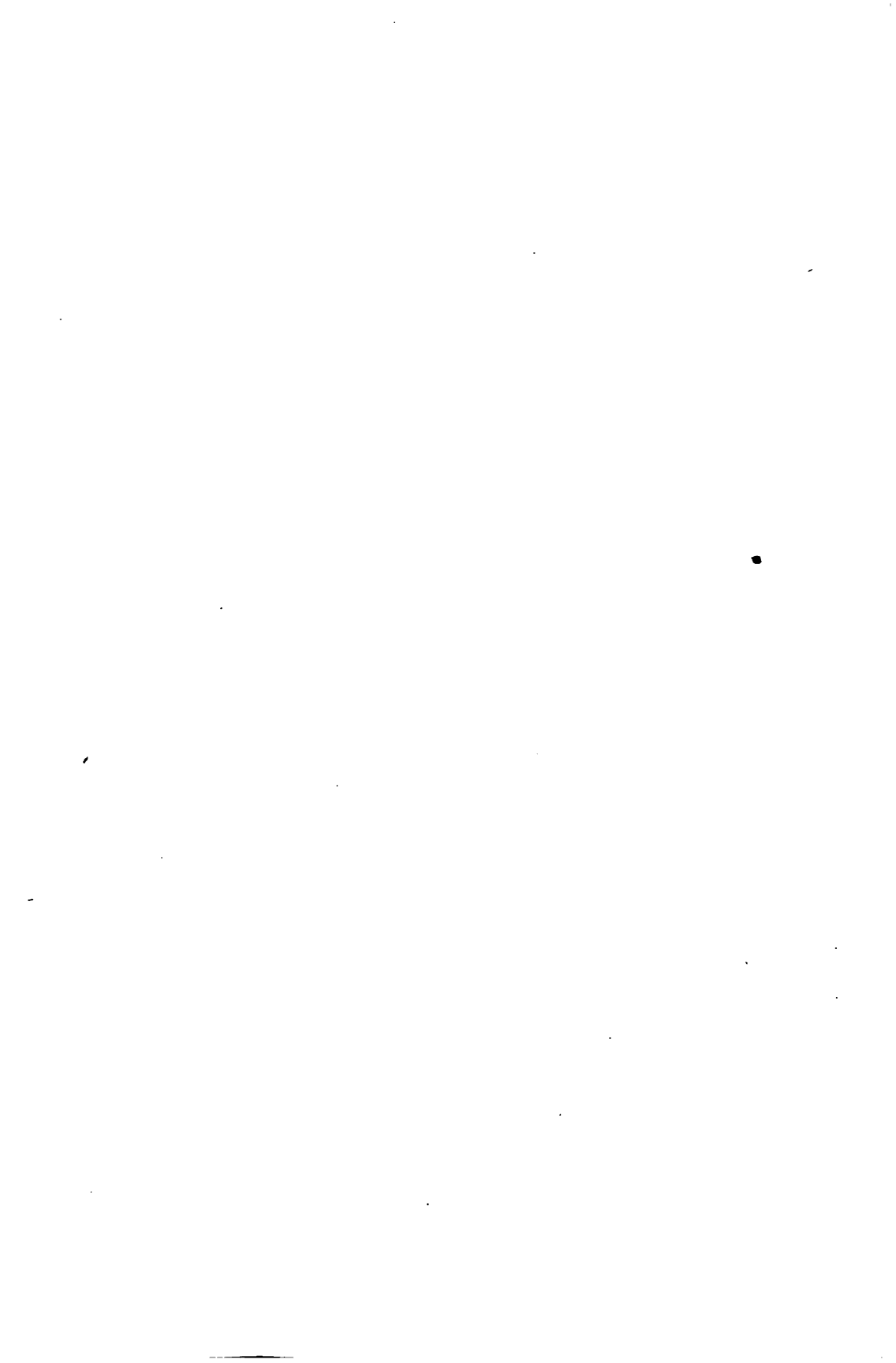
SEC. 5. That this act shall take effect and be in force from and after its passage.

Approved, April 9, 1912.

¹ Transferred from Department of Commerce and Labor to Department of Labor, upon the creation of the latter by act approved March 4, 1913.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF LABOR,
CHILDREN'S BUREAU,
Washington, D. C., July 15, 1913.

SIR: I transmit herewith monograph entitled "Prenatal Care," being the first of a contemplated series on the care of children.

A preliminary survey of the field prescribed by law for the bureau's investigations showed at once the urgency of the question of infant mortality. The United States Census Bureau estimates that 300,000 babies less than 1 year old died last year in this country, and it is authoritatively stated that at least half these deaths were needless. Accordingly the bureau's first field inquiry is upon the subject of infant mortality. The studies preliminary thereto have induced us to begin our series on the care of children with this monograph on prenatal care, for considerations of which the following statement is significant.

The latest reports of the Bureau of the Census on mortality statistics show that slightly more than 42 per cent of the infants dying under 1 year of age in the registration area in 1911 did not live to complete the first month of life, and that of this 42 per cent almost seven-tenths died as a result of conditions existing before they were born or of injury and accident at birth. Of those that lived less than one week about 83 per cent died of such causes, and of the number that lived less than one day 94 per cent died of these causes.

Thus the Children's Bureau was drawn inevitably to begin its contemplated series of monographs on the care of children by a statement regarding prenatal care for mother and child.

The preparation of such a statement has been requested by the National Congress of Mothers and by members of other representative bodies of women. It has been written by Mrs. Max West, of the staff of the bureau, from the standpoint of a woman who has university training, experience in Government research, and who is herself the mother of a family of young children. It has been prepared after careful study of the literature of the subject. It has been read and criticized by a large number of well-known physicians and nurses and by many mothers. To mention by name all those to whom the bureau is indebted for valuable aid in its preparation would be impos-

sible, but especial appreciation may be expressed of the generous assistance of Dr. J. Morris Slemons, professor of obstetrics and gynecology in the University of California.

This monograph is addressed to the average mother of this country. There is no purpose to invade the field of the medical or nursing professions, but rather to furnish such statements regarding hygiene and normal living as every mother has a right to possess in the interest of herself and her children. A standard of life for the family high enough to permit a woman to conserve her strength for her family, if she knows the facts essential for her guidance, is necessarily taken for granted. The attempt is made here to present some of the most important of these facts.

Respectfully submitted.

JULIA C. LATHROP, *Chief.*

HON. WILLIAM B. WILSON,
Secretary of Labor.

PRENATAL CARE.

PREGNANCY.

SIGNS OF PREGNANCY.

The first and most natural question which occurs to the prospective mother is how pregnancy manifests itself. The presumptive signs of pregnancy are these:

- (1) Cessation of menstruation.
- (2) Changes in the breasts.
- (3) Morning sickness.
- (4) Disturbance in urination.

The first of these is generally the most commonly significant, and although other causes may operate to suspend the menstrual flow, it is usually true, especially if menstruation has heretofore been regular, that the missing of two successive periods indicates the existence of pregnancy.

If, at the same time, unusual sensations in the breasts, such as tenderness to pressure, stinging, prickling, and the like, are felt, they support the probability of pregnancy.

What is known as morning sickness, namely, the occurrence of nausea, usually upon rising in the morning, with or without vomiting, is noted in nearly two-thirds of all cases, and is especially noticeable in the first pregnancy.

Urination may be troublesome. In the beginning of pregnancy there is often the desire to empty the bladder frequently, or there may be other annoying symptoms. These are chiefly due to the irritation caused by the pressure of the growing uterus against the bladder, and disappear after the first few weeks.

One of the more significant signs of pregnancy is the movement of the child in the uterus. This is commonly called the "quickening," and is usually felt by the mother about the sixteenth or eighteenth week. After this there can scarcely be room for doubt that pregnancy exists, although there are other signs upon which physicians rely, and only a physician can make a positive diagnosis.

DURATION OF PREGNANCY.

From an observation of countless cases of childbirth, in many countries and under all conditions, the length of the period of human gestation has come to be regarded as approximately 39 weeks, or 273 days.

Counting 30 days to the month, it will be seen that the commonly accepted period of nine months is nearly correct. To estimate the date at which a given birth will occur, physicians employ a rule, which, although far from exact, gives as close a reckoning as can be made. This method consists in counting forward 280 days from the beginning of the last menstrual period, thus allowing 7 days for the menstrual period, or, what comes to the same thing, counting backward 85 days. The simplest method is to count back 3 months and add 7 days, which is the average difference between three months and 85 days. In only about one out of twenty instances will the birth occur upon the exact date thus arrived at; some will occur a few days before and some a few days later; nevertheless this is as good a rule as can be found.

An example of the method of calculation is as follows: If the last menstruation began on October 30, counting back three months to July 30, and adding 7 days gives August 6 as the presumptive approximate date of confinement.

PERSONAL HYGIENE.

DIET DURING PREGNANCY.

The food of a woman during pregnancy need not differ materially from that to which she has been accustomed, provided that her diet previously has been chosen with due regard to its suitability. Any food or drink which causes distress, or even discomfort, because of indigestion, should be avoided at all times, but with this exception a pregnant woman may safely follow the dictates of her appetite as to the choice of her food.

There are, however, certain general principles that she should take into consideration. One of these is that the excretory organs—the bowels, the kidneys, and the skin—should be kept in the best possible condition, because during pregnancy the mother must get rid of not only her own waste products but also those of the unborn child. It will be found, therefore, that a light, laxative diet, which is at the same time satisfying and nutritious, will tend to keep her in health. An ideal diet includes a relatively large proportion of liquids, a small proportion of meats, and a correspondingly generous proportion of fresh fruits and vegetables. Most physicians prefer that meat should not be eaten oftener than once a day, but allow a wide latitude in the choice of other foods.

It is well to understand that the accumulation of waste products in the system is the cause of various minor ailments of pregnancy, as well as of some of the more serious complications. Since liquids help the bowels, kidneys, and skin to throw off these waste products, and therefore do away with some of the sources of danger at this

time, it is important that liquids should form a large part of the diet of every pregnant woman. The proper amount to be taken in 24 hours varies in different cases, but at least 2 quarts of liquid are needed, and sometimes 3 quarts. Much of this should be in the form of water. Specifically, pregnant women will usually need to drink from four to eight glasses a day. Other liquid foods are cocoa and chocolate, soups and broths, buttermilk and sweet milk. The last named is especially valuable in the diet of pregnancy, since milk not only contains all the elements of a perfect food, but is valuable for stimulating the kidneys to healthful action. Also if the habit of drinking milk is established during pregnancy, it will be an excellent preparation for maternal nursing. If milk has a tendency to constipate, as is sometimes the case, the persistent use of the laxative diet discussed later will probably do away with this objection. Every effort should be made to cultivate the taste for milk, for there is no other one food so indispensable to the mother of a nursing baby.

If one is accustomed to the daily use of tea and coffee it is unnecessary to stop their use altogether, but an effort should be made to reduce the amount taken. This rule applies with even greater force to all alcoholic drinks, since there is evidence to show that alcohol may enter the fetal system unchanged by its passage through the maternal blood, and thus injure the child.

QUANTITY OF FOOD.

One of the common sayings regarding pregnancy is that the prospective mother must "eat for two." But since it is an established fact that the child gains nine-tenths of its weight and substance after the fifth month of pregnancy, it is manifest that before that time there can be little need for any addition to the mother's dietary, if that has been sufficiently nourishing for her individual needs. Since it is also true that the child gains half its weight in the last eight weeks, there will be an increased demand for the heat and energy giving foods toward the end of pregnancy, which may be supplied, as has already been suggested, by the addition of milk to the usual diet, taking a glass between meals and at bedtime in order to avoid overloading the stomach at the regular meals, with consequent distress. If milk is not always acceptable, some other light food may be eaten, such as cocoa or broth or soup with biscuit. The habit of eating thus lightly several times a day may do much to relieve the nausea which so often accompanies the earlier weeks of pregnancy.

CONDITION OF THE BOWELS.

Many women, perhaps most women, suffer from a more or less persistent constipation during this period. This is due chiefly to the increased pressure exerted by the enlarging uterus upon the

intestines, and becomes more pronounced in the later months. Throughout pregnancy it is most important that the bowels should move freely at least once a day. This should be accomplished, whenever possible, by the use of laxative food, rather than by purgatives or enemas. A properly laxative diet will include fresh fruits, such as apples, peaches, apricots, pears, oranges, figs, cherries, pineapples, grapes, plums, strawberries, raspberries, or grapefruit. One or another of these is available at all times of the year in most parts of the country. Cooked fruits, such as prunes, figs, apples, peaches, and apricots are less effective, but may be freely eaten. Graham and whole-wheat bread, corn meal, and the bran foods as well as other coarse meals, such as oatmeal and grits, stimulate the intestines and increase their activity. Ordinary bran eaten raw with wholesome cream is often exceedingly beneficial when other dietary preparations have not produced the desired results. Bran bread is made as follows: 1 cup of cooking molasses, 1 teaspoonful of soda, 1 small teaspoonful of salt, 1 pint of sour milk or buttermilk, 1 quart of bran, 1 pint of flour. Stir well, and bake for one hour in a moderate oven. It may be baked in a loaf, or in gem pans, as preferred. The bread should be moist and tender, and may be eaten freely, day after day, and is quite sure to have a salutary effect if used persistently.

Fresh vegetables, especially the green ones, eaten with olive oil also have a laxative effect. Onions, asparagus, tomatoes, peas, potatoes, lima beans, carrots, string beans, spinach, celery, cress, and lettuce, as well as others, may be eaten in most cases. Cabbage, cauliflower, turnips, baked beans, radishes, and onions are not always readily digested. When this is the case they should, of course, not be eaten. If constipation persists in spite of dietary measures, senna, which is a well-known remedy, may be tried. Two receipts for senna mixtures follow:

Senna prunes.—Place an ounce of senna leaves in a jar and pour over them a quart of boiling water. After allowing them to stand for two hours, strain and to the clear liquid add a pound of well-washed prunes. Let them soak overnight. In the morning cook until tender in the same water, sweetening with two tablespoonfuls of brown sugar. Both the fruit and the sirup are laxative. Begin by eating half a dozen of the prunes with sirup at night, and increase or decrease the amount as may be needed.

Senna with prunes and figs.—This receipt does not call for cooking. Take a pound of dried figs and a pound of dried prunes, wash well. Remove the stones from the prunes and if very dry soak for an hour. Then put both fruits through the meat chopper, adding two ounces of finely powdered senna leaves. Stir into this mixture two tablespoonfuls of molasses to bind it together, the result being a thick paste. Begin by eating at bedtime an amount equal to the size of an

egg, and increase or decrease as may be necessary. Keep the paste tightly covered in a glass jar in a cool place. If the senna is distasteful, a smaller quantity may be used at first.

If still further measures are necessary, a doctor should be consulted before resorting to purgative medicines. Enemas, if regularly employed, are considered harmful; at best they only relieve the lower bowel and probably tend to destroy the natural muscular activity of the intestinal wall.

EXERCISE.

It should be the invariable practice of every pregnant woman to spend at least two hours of each day in the open air, and as much more as possible. If the weather is pleasant, walking is a valuable form of exercise if taken leisurely and not continued to the point of weariness. Women who have previously been accustomed to active out-of-door lives should modify their habits sufficiently to avoid fatiguing and dangerous sports; those who have previously led quiet indoor lives will find it wise to begin their open-air exercise very moderately. Easy gardening work is a good form of exercise and diverts the mind agreeably, but it must be merely an amusement, not a compelling task. Pleasant open-air occupations invigorate the muscles, stimulate the sweat glands and other excretory organs, strengthen and restore the nervous tissues, clear the brain, increase the heart action, and send a greater supply of blood to all parts of the body, thus promoting the digestion and assimilation of food, renewing the mental and moral health, increasing courage and cheerfulness, and finally develop character itself. There is nothing that takes the place of out-of-door life. If the day be cold or stormy enough to preclude going out, a walk may be taken on the porch, or at least in a room with the windows wide open; but in some form or other it should be taken until near the end of pregnancy, when it may become wearisome to the point of real fatigue.

There is a present-day tendency, with the greatly increased interest in sports of all sorts, to forget that a pregnant woman, while needing exercise, must conserve her strength and build it up, not tear it down with violent or exhausting forms of activity. Since the majority of women are busy during part of the day with their household duties, and many have more than they can do comfortably, they may often derive greater benefit from sitting quietly out in the fresh air, if the weather is suitable, and resting while they sew, read, or chat. One of the less obvious but equally important results of this out-of-door life is the amount of mental diversion which it affords. The sights and sounds of the open often induce a happy change of view and take the pressure off the overworked nerves even in the presence of genuine cause for worry.

CLOTHING.

The first purpose of clothing is to keep the body suitably warm in order to maintain an even circulation of blood and keep the sweat glands active. On this account it is wise, except in summer, when the heat of the weather keeps up a free perspiration, to wear sufficiently warm clothing and to wear it so evenly distributed over the whole surface of the body that the various parts are kept at approximately the same temperature. Clothing, of course, must be adapted to the demands of climate and season.

Maternity dress.—Nowadays it is possible to have maternity clothing which is not only perfectly healthful but both comfortable and pleasing without being conspicuous, so that the prospective mother need not deny herself the pleasure of going out among her friends. Any large pattern book will afford the necessary models, and such garments can be readily reproduced by the home dressmaker in whatever materials one may have at hand. The present fashion, which has waist and skirt fastened together at the belt and requires only one very light-weight petticoat, is distinctly advantageous to the woman preparing a maternity wardrobe. Union undergarments, with or without neck and sleeves according to the weather; a maternity waist or corset without bones; side elastics fastened to the corset or waist are suitable to this condition. Thus clothed, there will be no dragging skirts, nothing to bind the abdomen and breasts, and no garters to impede the circulation and cause varicose veins.

Corsets.—The ordinary corset should be discarded early in pregnancy. The present-day "straight-front" corset, which is so great an advance upon any previous model in general hygienic qualities, is, nevertheless, not adapted to the enlarging breasts and abdomen of pregnancy. There are, however, models which are intended for this purpose, and unless a woman decides to do without a corset entirely, it will add greatly to her convenience and comfort if she provides herself with one of the proper sort. In the later weeks of pregnancy an abdominal support will often be found helpful.

Shoes.—Since there is nothing that more effectually disturbs the nervous equilibrium than painful feet, it is especially important to give attention to their care at this time. Comfortable, well-fitting shoes are a first requisite. Toward the end of pregnancy the feet sometimes swell, so that larger shoes are necessary for comfort; and since there is danger of falling or of turning the ankles when high heels are used, it is better to give them up for this reason and, also, because high heels throw undue pressure upon the lower part of the abdomen, which is already under a strain.

CARE OF THE SKIN.

The skin should be kept in good condition at all times, but more than ever during pregnancy, when the work of the excretory organs, of which the skin is an important one, is increased. The skin is furnished with millions of tiny mouths, called pores, which provide an outlet for the waste material thrown off by the sweat glands. It is estimated that about a pint of water is eliminated each day through the pores of a healthy person. If they become clogged the waste products are retained in the blood until they can be disposed of by the lungs, bowels, and kidneys. Therefore, in order to keep the pores open and the skin in a condition of normal health it is well to wash the entire body every day. This bath may be a shower, tub, or sponge bath. The main object is to stimulate the circulation, and this object is gained when the entire surface of the body is wet and afterwards rubbed briskly with a rough towel. A morning bath is more effective, and there is less danger of taking cold afterwards if the water is at least cool. If the woman has been accustomed to the daily use of the cold bath, there is no reason why it should be given up at this time, provided she gets a healthy glow afterwards and the shock is not too great, but it is well to moderate the temperature in pregnancy. While the cold bath is invigorating and stimulating as well as refreshing, the warm bath is necessary for the thorough cleansing of the skin. Warm baths, with soap, should be taken at night, two or three times a week. There are times when a hot bath is restful and beneficial, but a pregnant woman should avoid taking such a bath at the time of the normal menstrual period, and should regard it as a remedial agent, not to be too frequently employed. Both hot and very cold baths are to be used with much discrimination.

FRESH AIR AND VENTILATION.

With all persons plenty of fresh air, night and day, is indispensable to health, and to none more than the pregnant woman. She should sleep with the windows open or out of doors at all seasons of the year, of course making due allowance for the severity of the winters in the North. It is not only necessary to provide for the adequate ventilation of sleeping rooms, but also for that of the living rooms of the house. Many persons, who are quite particular to open the windows in their bedrooms, forget that the other rooms need it quite as much. All the rooms of the house which are occupied should be thoroughly ventilated by throwing open the windows and doors every morning; at night when the family is assembled the air must be changed now and then or it will become unfit for human lungs,

CONDITION OF THE BREASTS.

It should be the hope, as it is the first duty, of every mother to nurse the coming baby, and in preparation for this function all the healthful measures already set forth will play an important part. In addition to them, however, the breasts and nipples may require some special attention. Ample room for the development of the breasts must be allowed at all times by loose clothing. It will be well to have the physician observe the condition of the nipples about eight weeks before confinement, in order that he may determine whether or not they require special treatment. For toughening they may be washed with warm water and soap at bedtime and anointed afterwards with lanolin and covered with a piece of soft linen.

CARE OF THE TEETH.

The teeth are thought to be more susceptible to decay during pregnancy than ordinarily. This may be partly explained by the demand for the lime salts needed to build up the child's skeleton and partly by the effect that the regurgitation of the acid contents of the stomach has in the development and enlargement of cavities, which lead to toothache and the loosening of the teeth. For these reasons it is advisable for every woman, as soon as she knows that she is pregnant, to go to a good dentist and have such repairs made to her teeth as are needed. There is no reason to suppose that this will have any other than a beneficial effect if attended to early. In addition to this, the teeth should be brushed after each meal and the mouth well rinsed after any attack of vomiting or eructation of gas. Excellent washes for the mouth are a teaspoonful of milk of magnesia or a tablespoonful of limewater or half a teaspoonful of common baking soda dissolved in a glass of water, or other antiseptic washes.

COMPLICATIONS OF PREGNANCY AND HOW TO AVOID THEM

DISTURBANCES OF THE KIDNEYS.

In order to know whether the kidneys are performing their functions normally, the quantity of urine passed in 24 hours should be measured. If there is less than 3 pints the patient is not drinking enough water. The same conclusion may be drawn when the urine has a darkened color and shows sediment, which conditions are usually due to concentration of the urine. The patient herself can draw no other conclusions from the appearance of the urine. Albumin and sugar, the two most significant abnormal elements, give no clue to their presence save in response to specific chemical tests. Accordingly specimens of the urine should be submitted frequently to a physician, in order that he may make these tests, and, in case anything abnormal is found, order proper treatment. This examination

is so important for her welfare that every woman should insist upon having it made at least once a month during the first half of pregnancy, and oftener toward the end. It is comparatively little trouble to do this, and is a precautionary measure that may serve to prevent a serious complication later. The method of collecting the urine is as follows:

Use a perfectly clean vessel or jar with a cover. Scald it thoroughly and keep in a cool place. Beginning at some convenient hour in the morning, say 8 o'clock, empty the bladder and throw the urine away. Thereafter empty the bladder into the jar each time until the next morning at the same hour. Keep the jar tightly covered. Measure the amount of urine passed, and, after shaking it well, fill a perfectly clean 6-ounce bottle, cork tightly, label with the name, date, and 24-hour quantity, and send at once to the doctor. A teaspoonful of boracic acid will help to keep the contents of the jar from decomposing.

NAUSEA AND VOMITING.

The distressing but not usually alarming ailment known as "morning sickness," from which more than one-half of all pregnant women suffer, may sometimes be relieved by taking a little dry food before rising, such as toast or crackers, chewed and swallowed without liquid; and some women find comfort in taking a cup of tea or coffee. An excellent preventive measure lies in eating six small meals a day, instead of three large ones, and eating very lightly at the last meal of the day. It is important to do all one can to ward off the initial attack, as the tendency to nausea is easily established. To adopt and maintain a healthful mental attitude is of great importance, as worry or any other morbid conditions of the mind exaggerates this ailment. It is wise, therefore, to use every effort to keep the mind from dwelling on the subject of sickness and anticipating an attack of nausea. Out-of-door life and plenty of normal, happy interests will do a great deal to counteract this illness. If, however, in spite of these measures vomiting persists or increases, the doctor should be notified, as the condition sometimes becomes serious enough to require medical skill to cope with it successfully.

HEARTBURN.

"Heartburn"—which, by the way, has nothing whatever to do with the heart—is the sensation of burning in the throat caused by an abnormal development of acid in the stomach. Since fat taken before meals serves to retard the secretion of acids, the trouble may sometimes be relieved by taking a glass of rich milk or a tablespoonful of olive oil 15 or 20 minutes before meal time. If, however, the attack has begun, fat but makes it worse, and the patient must refrain

from all fat, such as butter, milk, cream, and fried and greasy foods, until the attack is over. Some physicians prefer to treat this trouble by means of alkaline drinks.

VARICOSE VEINS.

The swelling of the surface veins of the legs, caused by the unusual pressure on the blood vessels is a somewhat common accompaniment of pregnancy. The patient suffering from this trouble should sit or lie down very often, and when sitting should rest the feet on a stool or chair in order to relieve the pressure. Relief in severer cases may be obtained by wearing a thin flannel bandage about the calves of the legs. Bias strips of flannel, 3 inches wide, are sewed together flat until the strip measures 8 yards in length. It is best to bandage the legs before rising. Begin to wind at the toes, leaving the heel uncovered, carrying the bandage round and round the leg and well over the knees, or higher if the veins of the thigh are distended. The doctor or nurse will demonstrate the method of bandaging if the patient finds it difficult. If in spite of these measures the trouble persists, the doctor will direct the treatment.

HEMORRHOIDS OR PILES.

This ailment differs from varicose veins only in the location. Constipation exaggerates the trouble, and straining to evacuate the bowel is always to be avoided. The call to the closet should be heeded the moment it is felt, but if the bowel does not move readily some simple laxative, such as licorice powder, should be employed. The constant use of a laxative diet is the best preventive measure. The patient should lie down frequently while the attack persists. A pillow under the hips often relieves the pain.

CRAMPS.

In the later months of pregnancy the pressure on the nerves of the legs sometimes gives rise to cramps in the leg muscles. They may attack the patient during sleep or when the legs are suddenly stretched, upon waking. The pain is relieved by rubbing, applying hot cloths, or by elevating the feet.

LEUCORRHEA.

This is the whitish discharge from the vagina, due commonly to the congestion of the vaginal walls resulting from the pressure of the enlarging uterus on the blood vessels through which the blood is ordinarily returned to the general circulation. It is often annoying, but not usually serious. Douches should not be taken for its relief save under medical direction.

TOXEMIA.

As the child in the uterus grows there is constantly being sent back into the mother's blood an increasing amount of waste matter; if, in addition, the mother's own nutritional processes are imperfect and there is difficulty in eliminating all these waste products, a condition may result which will be more or less serious for both the mother and the child. This condition is called toxemia. Some of the common symptoms of toxemia are:

- (1) Serious or persistent vomiting.
- (2) Repeated headaches.
- (3) Dizziness.
- (4) Puffiness about the face and hands.
- (5) Blurring of the vision, or spots before the eyes.
- (6) Neuralgic pains, especially about the pit of the stomach.
- (7) Muscular twitching.

It must be understood that one or more of these symptoms does not necessarily indicate that toxemia is present, for in many cases the cause of these disturbances may be very easily removed and result in nothing of any consequence. But when such symptoms appear they should always be brought to the attention of the doctor and it will be well to send a specimen of the urine to him immediately. Prevention of the serious results of toxemia, by observing and reporting to the doctor the symptoms which precede it, is of great moment to all pregnant women. There is a tendency among women to regard some of these disturbances as the necessary accompaniment of the condition. There is no truth in the old saying that a "sick pregnancy is a safe one," and it should be entirely disregarded. There is no possible virtue, in pregnancy or in any other condition, in enduring any pain or distress that can be prevented by proper means, and much harm may result from such neglect. Every pregnant woman should strive to keep in mind the plain and simple rules for health, the most important of which it may not be amiss to bring together here:

- (1) Guard scrupulously against continued constipation.
- (2) Avoid an excessive quantity of meat.
- (3) Drink a liberal amount of water.
- (4) Take plenty of out-door exercise and keep all the rooms of the house well ventilated day and night.
- (5) Bathe every day.
- (6) Wear light but suitably warm and comfortable clothing.
- (7) Sleep at least 8 hours out of 24, and do not become overtired at any time.
- (8) Have the urine examined at stated intervals.
- (9) Strive to be happy, seek self-control, and do not worry.
- (10) Consult the doctor when symptoms of illness persist.

MISCARRIAGE.

It is not until the eighteenth week of pregnancy that the union between the placenta and the uterus becomes firm, consequently it is during these early weeks that miscarriage is most likely to occur. There are many possible causes of this mishap. Among them are heavy work, such as washing, sweeping, lifting, or moving heavy burdens, running a sewing machine, or other form of taxing labor, or it may result from indulgence in amusements that jar the body, such as dancing, skating, tennis, golf, horseback riding, climbing, or jolting over rough roads in a carriage or automobile. Miscarriage may also be due to imperfect development of the embryo or to some constitutional disease of the mother, or to some fault in the position of the uterus or to some abnormality of its lining, and in these cases it can not usually be avoided. Many times the cause is impossible to discover, and a woman may establish the habit of miscarriage.

The prevention of many of these accidents lies in guarding against overexertion in the early weeks. If the tendency to miscarriage has been established a prolonged stay in bed may carry a woman past the danger when no other means will avail. At the first appearance of bleeding or abdominal pain the patient should go to bed. If it persists, it is wise to send for the doctor in all cases, but especially if the pregnancy has advanced beyond the sixth week. If the doctor can not readily be summoned she must keep herself perfectly quiet until the disturbance has subsided. If the miscarriage occurs before the sixth week it may appear as nothing more than an unusually severe menstrual period, but a miscarriage at whatever stage is due to the loosening of the membranes which surround the fetus from their attachment to the walls of the uterus. If this loosening is so slight that the life of the fetus is not endangered a miscarriage may be averted, as has been said, by rest in bed. But if the bleeding continues or increases it shows that so great an area of the placental tissue has been detached from the uterine wall that miscarriage is sure to result. The danger then is that portions of this tissue may adhere to the uterus and not be expelled. In order to determine whether this is the case it is quite important that a doctor should be in attendance, and that whatever has been expelled be saved for his inspection. A neglected miscarriage may mean the total loss of health, while, on the other hand, a properly attended miscarriage is scarcely more likely to have bad results than a delivery at term. It is unreasonable and dangerous to regard a miscarriage as something to be concealed, and on this account to deprive oneself of proper care and treatment. This unhappy way of regarding a miscarriage is perhaps partly due to the association in many persons' minds of a miscarriage with a criminal abortion, the results of which are often serious and sometimes fatal. Such an attitude of mind is unjustified,

for the reason that there are many causes of this unfortunate accident, and often, humanly speaking, it is unavoidable. There is no reason, therefore, why this should not be treated as any other illness and such measures be taken as will best conserve the future health. Extreme care is necessary at normal menstrual periods.

MATERNAL IMPRESSIONS.

By a maternal impression is meant an injurious physical modification of the child through the influence of some harmful state of mind in the mother. Since there is current more misinformation on this matter than almost any other connected with the whole subject of maternity, it seems wise to deal with it at some length. The underlying anatomical facts are so technical that a simple brief explanation is somewhat difficult; but since the belief in the "marking" of babies is so widespread and productive of so much anxiety, it will be comforting to many women to learn on what slight foundations the belief rests. Those who hold to this possibility consider that if the mother is injured in some way or sees another person injured or observes a deformed or defective person, the impression thus made upon her mind will repeat itself in some corresponding defect in the child's body. Doctors and other scientists are now practically agreed that, most happily for all concerned, these opinions have no basis in fact. Some of the reasons for this conclusion are:

1. So far as is known there is no connection between the mother and the child in the uterus by which nervous impressions can be conveyed. The only communication between the two lies in the interchange of the materials of nutrition and excretion through the placenta, where, by processes not yet clearly understood, the food which the developing child needs is extracted from the maternal blood and the waste products resulting from the child's growth are taken up by the maternal circulation and disposed of with those of the mother. The mother's blood never enters the child, so that even if the blood were able to convey nervous impressions, the fact that the two circulations are separate and distinct makes the direct injury of the child in this way an impossibility. Indeed, it appears that nature in thus erecting a barrier between the mother and child has specifically provided for the protection of the fetus from such injuries.

2. There are few mothers who have not at some time during their pregnancies had experiences of a disturbing nature of greater or less severity. Accordingly most babies ought to be born "marked," if this belief is true. Manifestly this is not the case. It is not the case oftentimes even when the result has been expected. An American obstetrician of wide experience says that it is his opinion, based on an observation extending over a number of years among all classes

of mothers, that the cause which was expected to show some harmful result to the baby was ineffective in ninety-nine cases out of a hundred, and that the hundredth case was coincidence. When one considers the great number of strange and unhappy things that happen about us every day, it is not remarkable that pregnant women should encounter them sufficiently often to bring about many odd and striking coincidences.

3. Many women do not realize that they are pregnant until the sixth or eighth week, and do not usually begin to worry about the baleful effects which they hear talked about until pregnancy is well advanced. Investigation has shown that the form of the child is established by the beginning of the third month, therefore disturbing events which occur in the later months plainly can have no effect.

But it must not be assumed from what has been said that the mother is therefore a passive instrument in the process of embryonic and fetal growth. The harm which a mother may do her child in the uterus is not in the fortuitous, accidental manner above suggested, but rather by her failure to order her own life in the way that will result in the highest degree of health and happiness for herself and, therefore, for the child. For, although the child is undoubtedly protected from direct injury by means of occurrences outside the control of the mother, nevertheless he is subject to harm or benefit from conditions that are usually quite within her own control. As has already been said, the child in the uterus is entirely dependent for its development upon the materials of nutrition which it extracts from the blood of the mother in those mysterious processes of interchange which occur in the placenta, and it is only through nutrition that the mother is able to influence the child's future. If, then, she lives in such a manner as to establish and conserve her own health, taking plenty of sleep and exercise, eating sensibly of simple food, and in every way striving to take the best possible care of her own body, so that the digestive, assimilative, and excretory functions are carried on in the highest degree of efficiency, she can be quite sure that the child will be able thereby to build up for himself a sound and normal body and brain. On the other hand, if a woman neglects these plain rules of health and goes through her pregnancy repining or lamenting her condition, paying but slight attention to her own bodily functions, it is conceivable that the child may thereby be robbed of some of the nutrition he needs for his own best development. There can be little doubt that many puny, wailing babies did not get the right sort of nutrition during the prenatal period, and that their nervous condition, often attributed by their mothers to "maternal impressions" and nervous states that occurred during pregnancy, are really due simply to the lack of proper nourishment when the little body was beginning its growth, and doubtless many infant deaths are traceable to these causes.

PREPARATIONS FOR CONFINEMENT.

ENGAGING THE DOCTOR AND THE NURSE.

It is well to engage the doctor as early in the pregnancy as possible. Although he may have very little to do beyond giving advice and making the routine examinations of the urine, he will be much more competent to deal with any untoward symptoms that may develop than when the case has not been under his previous observation.

It is a good thing to consult the doctor before engaging the nurse, as most physicians have the names of competent nurses on file, and if the doctor and nurse are used to working together it makes things easier. The nurse should be engaged some time in advance of the expected date of confinement. Since this date is uncertain, it must be quite clearly understood when her pay begins. She should visit the patient a few weeks before the expected date and make herself familiar with the rooms and arrangements for the birth. The services of the nurse will be required for a varying length of time, depending upon the peculiarities of the case, but it may be laid down as a truth that a competent nurse, employed for two weeks at least, and for three or four in many cases, will be an economy in the long run. Many a case of life-long invalidism has resulted from the lack of suitable and sufficient attention from the doctor or nurse or both at confinement, and the extra dollars spent then may save a greater and possibly futile expenditure later.

PLACE OF CONFINEMENT.

It is becoming more and more common for women to prefer to go to a hospital to be confined. The hospital has many advantages over the private house at this time. It is both cheaper and safer, as well as far more convenient. There can be no doubt that it is safer, for if any emergency occurs not only are all the necessary appliances ready for instant use, but doctors and nurses are at hand to assist in any way that their services may be needed. It is cheaper, not only because of the number of things that must be provided for a home confinement, but because the nurse's salary, board, and laundry must be paid. In the hospital the weekly amount paid includes the board of the patient, the routine care, and all appliances of every sort that will be used. The private physician's fees are, of course, outside of the hospital charges, and laundry work usually must be done outside. Although in most cases the routine care given by the ward nurses will be sufficient, it is a great comfort to the mother and a convenience to the doctor to have a "special" nurse for a week or two. This nurse must then be paid independently of the hospital fees. If such a nurse is employed, her only duty is to be at the service of mother and babe day and night. It is not usually nec-

essary to engage this nurse in advance, for if the doctor finds that she is needed he can make the arrangement after the baby is born.

If the confinement takes place at home, it is possible in many places, particularly in large cities, to secure the services of the visiting nurse, who will come as needed, and is paid only a small fee per visit. If the confinement is a normal one, and some one can be had to do the housework, the needs of mother and baby may be very well provided for in this way, and at a much smaller cost than when a trained nurse is employed for the entire time. But, as has been said, the best nursing that can be had is desirable for the woman in childbirth.

SUPPLIES NEEDED.

If the confinement is to take place at home, the following articles are likely to be needed:

- Two to four pounds of absorbent cotton.
- One large package of sterile gauze (25 yards).
- Four rolls of cotton batting.
- Two yards of stout muslin for abdominal binders.
- Twelve old towels or diapers.
- Two old sheets.
- Two yards of bobbin, or very narrow tape, for tying the cord.

From these supplies the mother or nurse may make the necessary pads and bandages, which should then be sterilized, in accordance with directions which follow. Other things that may be needed are:

- One hundred bichlorid of mercury tablets.
- Four ounces powdered boric acid.
- One bottle of white vaselin.
- One pound of Castile soap.
- One quart of grain alcohol.
- One douche pan.
- One stiff hand brush.
- One slop jar or covered enamel bucket.
- Three pottery or agateware basins, one 16 inches and two 11 inches in diameter.
- Pitchers, at least three, holding 1 quart and upward.
- One and one-half yards of rubber sheeting, at least 36 inches wide, or
- One and one-half yards of white table oilcloth, to protect the mattress.
- One 2-quart fountain syringe.
- One medicine glass.
- One medicine dropper.
- One drinking tube.

PREPARATION OF DRESSINGS.

Sanitary pads.—These are used to absorb the discharges after the mother has been delivered. They are 10 inches long and 4 inches wide. As absorbent cotton is comparatively expensive, it will be

found more economical to make the greater part of each pad of the batting, facing one side with a layer of the absorbent kind. Cut the sterile gauze into pieces of the right size to fold around the cotton and extend 2 or 3 inches beyond it at each end. These pads should be about an inch thick, and at least 5 dozen will be needed. They are pinned front and back to the abdominal binder, which is simply a strip of cotton cloth 12 inches wide and long enough to be fastened comfortably around the abdomen.

Delivery pads.—These pads should be a yard square and 4 inches thick. Cotton batting may form the principal part of the thickness, but the top layer of absorbent cotton should be at least 1 inch thick. Make two of these pads. Cotton waste, if boiled in washing soda and dried thoroughly in the sun, makes a cheap and effective filling in the place of batting, but as the texture is very loose a thicker layer must be used. If necessary, newspapers may be used both to protect the mattress and for the delivery pads. For the latter use they should be covered with old sheets which have been sterilized.

Gauze sponges.—Two dozen of these will be needed. They are made by cutting sterile gauze into 15-inch lengths, the width of the gauze. Fold down one raw edge about 3 inches; double the strip by putting the selva edge together, having the raw edge of the fold on the outside. Fold this into thirds both ways and turn the sponge inside out, so as to have all the raw edges inside.

Cotton pledgets.—These are wads of absorbent cotton, the size of an egg, having the ends of the cotton twisted into the roll. Make several dozen and put them in a small pillowcase or cheesecloth bag.

Gauze squares.—Cut fifty 4-inch squares of the gauze. These will be used to wash the baby's eyes and for other purposes.

Bobbin.—Cut ordinary cotton bobbin into six 9-inch lengths for tying the cord.

How to sterilize.—It is possible to sterilize the dressings in the oven, but as dry heat is less effective than moist heat, and there is danger of scorching by this method, it is better to use steam. To accomplish this, the smaller things may be sterilized in a large kettle or saucepan, and the larger ones in the wash boiler. For the first, invert a bowl several inches high in the bottom of the kettle. On this bowl lay a plate, and on this place the dressings. They may be put into a cheesecloth bag for ease in handling. Let the water just cover the bowl and cover the kettle tightly. The articles should remain for one hour after the water begins to boil. To sterilize in the boiler, a convenient method is to suspend the dressings in the steam by means of a hammock made of stout muslin, which is merely a strip somewhat longer than the boiler, so that it will hang down to about a third the depth

of the boiler. It must be fastened securely to the handles of the boiler by means of a stout drawstring run through each end and, for additional security, down each side as well. The boiler should be filled about one-quarter full of water. If the dressings are placed in loose cheesecloth bags, it will facilitate handling them. After the articles have been put in the hammock the boiler cover should be put on and the articles left to steam for an hour, when they may be removed and dried thoroughly in the sun by pinning the bags to the clothesline or, if that is not possible, they may be dried in the oven, being very careful not to burn them. They are then to be put away in a closed drawer until needed.

OTHER PREPARATIONS.

The brightest room in the house should be chosen for the delivery. If possible, it should be close to the bathroom, and if there is a communicating room that can be given up to the use of the nurse and the baby, this will be greatly to the advantage of the mother. It is needless to say that the delivery room should be made as clean as possible, and all draperies, hangings, and upholstered furniture should be removed.

A single metal bed, either iron or brass, and a comfortable mattress are desirable. The ordinary double bed is inconvenient, because it is both too wide and too low. But if any low bed must be used, it will be well to elevate it by putting blocks, 6 or 8 inches high, under the four legs, first removing the casters so that there will be no danger of the bed slipping off, and if the mattress sags in the middle, a board or two under the mattress will be found advantageous. The bed should be placed in such a position that both the doctor and the nurse can get at it at once, and so that a good light falls upon it, especially at night, for in case stitches must be taken a proper light is of the first importance. A portable electric lamp is of great convenience under these circumstances.

OUTFIT FOR THE BABY.

It is very apt to be the case, especially with a first baby, that the mother wastes a good deal of vital energy in the preparation of an elaborate layette, only to find that many of the garments are outgrown before they are worn. On this account it is much more economical, not only of materials but of the mother's strength, to make only a few very simple garments at first. Later, when the baby is older, such a wardrobe as the mother desires may be added, but for a little baby plain garments of the softest materials procurable are the most suitable.

Large dealers now supply the entire outfit for an infant, and in many cases it is an economy to buy one of these layettes complete.

In preparing for the newborn several principles should be kept in mind. The first is that the garments must be warm without being unduly heavy; another, that they must be loose enough to provide for perfect freedom of the muscles; the third is the desirability of perfect simplicity; and the fourth that of cleanliness. Adornment serves no other purpose than to gratify the mother's taste.

THE BABY'S CLOTHES.

The following list includes all the garments that it is necessary for any young infant to have for the first few weeks of life; later, if a more elaborate outfit is desired, other garments may be added:

- Three abdominal bands, 6 to 8 inches wide and 20 inches long, soft flannel strips, unhemmed.
- Three shirts, size 2, wool and cotton, or wool and silk, not all wool.
- Four flannel skirts, "Gertrude" style.
- Three nightgowns or wrappers of outing flannel, buttoned in front.
- Eight white slips.
- Three knit bands, with shoulder straps, part wool.
- At least 4 dozen diapers.
- Cloak.
- Cap.
- Carriage blanket of crocheted or knitted wool.
- Three pairs of socks, if in summer; three pairs of long white merino stockings, if the weather is cold.

NURSERY EQUIPMENT.

The essential articles for the baby's nursery are a comfortable bed and the things that will be needed in his toilet. The following list will be found to include the essential items:

- An old soft blanket.
- Four dozen safety pins of different sizes.
- Some old soft towels.
- Soft wash cloths.
- Hot-water bag, with flannel cover.
- Talcum powder.
- Castile soap.
- Olive oil.
- Two ounces of boric acid.
- A crib. If desired, a clothes basket makes a good bed. A basket or box that may readily be moved about is a great convenience. The mattress for any sort of a bed may be made from table felting, which, when folded a few times, makes a very soft, smooth bed and has the great advantage over the ordinary mattress that it may be washed and boiled and dried in the sun.

ADDITIONAL CONVENIENCES.

Below is a list of additional articles that will be found convenient in the care of the baby:

Bathtub, tin, galvanized-iron ware, or rubber.

Drying frames for shirts and stockings.

Bath apron of turkish toweling or outing flannel:

A low chair, without arms.

Baby scales.

A low screen, to protect the baby while it is being bathed.

A low table on which to bathe and dress the baby.

BIRTH OF THE BABY.

At the conclusion of the nine months' period nature has directed that the child shall be born. This involves the expenditure of energy, and thus the name "labor" has been given to the act of birth. This act is a natural one, and although it may be painful and exhausting it should ordinarily proceed and terminate in a normal manner, provided the patient has had proper care during her pregnancy and is in the hands of a competent attendant who understands the necessity for perfect cleanliness and uses every means to secure it.

PRECAUTIONS THAT MUST BE TAKEN.

The prevention of the infection that gives rise to puerperal septicaemia, or "child-bed" fever, as it was formerly called, lies in the scrupulous care taken by everyone who is concerned in any way with the attendance upon a woman in childbirth to allow nothing not absolutely clean to touch her. This is a wholly preventable disease, since its cause and the measures necessary to prevent it are well known, and all women in childbirth or their families have a right to insist upon this protection. No physician who values his professional reputation will be satisfied to neglect any of the well-understood precautions against this most dreadful disease. The patient, the family, and the nurse must be ready in every way to aid the physician in this effort.

LABOR.

The progress of labor may be divided into three stages. The first is occupied with the dilatation of the mouth of the uterus; the second with the expulsion of the child, and the third with the separation and expulsion of the afterbirth and membranes. The first is the longest and most trying part to the patient. In this stage the mouth of the uterus, which is less than one-quarter of an inch in diameter at first, must increase to $3\frac{1}{2}$ or 4 inches before it is large enough to admit the passage of the child's body. This process may occupy

some hours, and is very tedious to the patient, because she is unable to feel for herself that she is making progress. To pass the time between the pains, she may occupy herself in any way she likes; she may sit down, lie down, walk about, or sometimes even sleep. The pains will recur at decreasing intervals and with increasing strength as the dilatation of the mouth of the uterus proceeds, and in the early part of this stage the patient should summon the nurse, if she is not already at hand, and notify the doctor that the confinement has begun. Since the doctor can not hasten the progress of this stage, it is not usually necessary for him to remain with the patient continuously. But he should keep close watch of the case throughout and be always within easy call. The patient will take a warm tub bath, unless the doctor otherwise directs, and should have an enema of warm soapsuds. If she is hungry, she may have some light food. As soon as the doctor comes he will, however, give such advice on all these details as he thinks best. The bed should be made ready, protecting the mattress with the rubber sheet or oilcloth or several layers of newspapers, and an extra sheet, folded in the middle, pinned across the bed under the mother's hips. This sheet may be drawn out after the birth, leaving the bed clean and dry. If the confinement is to occur at a hospital, the patient should be ready to go at the first pain. The ride to the hospital will help to pass the time, and may also serve to hasten the delivery, to some extent. The patient will take with her a bag that should have been packed some time before, containing nightgowns, toilet articles, slippers, wrapper, and the like, with the baby's first outfit, including plenty of diapers.

The second stage of labor is much shorter than the first, usually from two to two and one-half hours. It is less trying to the patient than the first stage, because the pains are of an expulsive nature, accompanied by the inclination to strain, so that with each pain she can feel that she is accomplishing something. The pain of the actual birth may be lessened or altogether deadened by the use of an anesthetic, if the physician so decides. The "bag of waters," as the fluid surrounding the child is called, is usually ruptured as the expulsive pains of this stage begin, and after this occurs it will normally not be long before the child is born. In case the bag of waters is ruptured earlier, as sometimes happens, the birth is said to be "dry," and will probably proceed somewhat more slowly than otherwise.

After the baby is born the third stage of labor, namely, that occupied with the detachment and expulsion of the afterbirth and membranes, takes place. This occupies about half an hour. "After-pains" are the pains which immediately follow the emptying of the uterus, and are due to the natural contractions of its muscle fibers. These pains are less apt to be felt in a first pregnancy than in later ones.

EMERGENCIES.

It sometimes happens that the baby is born before the arrival of the doctor or nurse when labor comes on earlier than was expected or the doctor is at some distance. In an emergency like this it is necessary for the prospective mother and her family to know what to do.

The delivery room must be set in order and the bed freshly made. The mattress should first be covered with the rubber sheet or oilcloth, or in emergency newspapers may be used. The patient should have an enema of warm soapsuds and take a warm bath, if possible. At least, the external genital organs should be well washed. The sterilized dressings, still in their packages, should be put close to hand, and two quarts of bichlorid of mercury solution should be prepared, following the directions on the bottle for a one-thousandth strength. (If the doctor prefers a weaker solution or a different antiseptic, he will give the proper directions when he takes charge.) The greatest care must be taken not to leave the solution or the tablets within reach of a child, since they are deadly poison. A large kettle of water should be boiled and cooled without being uncovered.

Meanwhile, if matters have progressed so far that the pains are returning every five minutes, or if the "waters" have broken, the patient should go to bed; she will lie on her back, with the knees drawn up and spread apart. (If a doctor is in charge, he may prefer another position.) When the pain comes the patient will bear down, but will not attempt to strain save when the desire to do so is imperative. Whoever is at hand to render assistance will then put one of the delivery pads under the patient's hips (pads of newspapers slipped inside a folded sheet may be used), and should thoroughly disinfect the hands by scrubbing them for five minutes in warm water, using a brush and plenty of soap. After they have been washed, the nails cleaned, and the hands washed again they should be soaked in the bichlorid solution for five minutes or longer if there is time. If bichlorid solution can not be had at the moment, soak the hands in alcohol. The attendant will sit by the patient until the baby is born, but should not touch her until the head of the baby appears. After the head is born, if the face of the baby turns blue the patient should be told to strain vigorously, and at the same time she may press with both hands upon her abdomen, while the attendant grasps the baby's head by the chin and under the back and pulls it steadily but gently downward. These measures will shortly effect delivery. As soon as the child is born it should take a breath and cry. If it does not do this, the attendant must slap it smartly upon the back, meanwhile holding it up by its feet for a moment. When it cries it should be laid down close enough to the mother so that the navel cord will

not be stretched, care being taken not to smother it or allow any of the discharges to touch its face. Then the attendant will tie the cord twice, once at a distance of 2 inches from the child's navel, once 2 inches nearer the mother, using pieces of the sterilized bobbin or other string that has been boiled. The cord is then cut with the scissors, between the two ligatures. There will be a single spurt of blood, but bleeding will immediately cease if the ligatures are tight. If bleeding from the baby's navel should not stop altogether, another ligature should be made nearer the navel without disturbing the first. The baby should then be covered with something warm but soft, and removed to a place of safety while the mother is being taken care of. The separation of the afterbirth takes place within 10 to 30 minutes in most cases. Sometimes the interval is as long as two hours, but the process must not be hurried, save under the doctor's direction. Sometimes the mother can help the matter by straining as she did to bring the child, but unless the doctor or nurse has arrived it is better to be patient and wait for the natural removal of the contents of the uterus. All the soiled pads and dressings and the mass of tissue expelled must be saved for the doctor's inspection. After the soiled pads have been removed the region around the vagina is carefully washed with the bichlorid solution, using pieces of the sterile gauze or some of the cotton pledgets for this purpose. An abdominal binder and one of the sanitary pads are then put on. All the soiled dressings are removed and the pad beneath the mother renewed. If after all is over the mother suffers from a nervous chill, as often happens, she need not be alarmed. A hot-water bag at her feet, a glass of hot milk, and a blanket will soon warm her and she will usually be ready to fall asleep to rest after the fatigue of the labor.

There is always a considerable discharge of blood at first; but if for any reason there is an excessive amount of bleeding and the doctor has not come, an attempt must be made to stop it without delay. The attendant, sitting on the bed, facing the foot of the bed, with the hands on the abdomen, will feel for the womb, which will be a rather large soft mass just under the navel, and will massage it gently, passing the thumb over the front of the organ, while the fingers surround it. These manipulations will cause the fibers of the muscles to contract and will help to stop the bleeding. Cracked ice, wrapped in a towel, may be laid over the uterus to help in the contractions, and sometimes putting the baby to breast will serve the same purpose.

When the doctor comes, he will repair any laceration that may have occurred.

CARE OF THE BABY.

Immediately after the head is born, before the delivery of the body, the baby's eyes should be carefully wiped free from mucus or blood, with bits of clean absorbent cotton or soft old household linen which has been sterilized by boiling, dipped in boiled water, or in saturated solution of boric acid. A separate piece of cotton should be used for each eye and should be discarded as soon as it has been used once. Wipe from the nose outward without opening the lid. At this time also the lips and nose should be wiped clean and the nurse's or doctor's little finger, wrapped with a piece of moist cotton, should be passed into the child's mouth and any accumulated mucus removed by an outward sweep of the finger. As soon after the birth as possible the eyelids should be again wiped clean of mucus, and two drops of an antiseptic solution, which the doctor or nurse will provide, should be put into each of the baby's eyes, gently opening the lids so that the medicine will get inside the eye. This care is necessary because a baby's eyes may become infected during the passage through the birth canal and this infection sometimes leads to ophthalmia neonatorum, as it is called, which may cause blindness. It is a perfectly simple, harmless treatment, and is practically sure to preserve the sight. It is a wise precaution, therefore, to take in all cases. If, however, this is not done and symptoms of the disease appear, namely, redness, swelling of the lids, and a discharge from beneath them, the mother should not lose an hour in placing the baby in the hands of the most competent physician she can find. The eyes may be saved by a few hours' care at this time; neglect may doom the baby to lifelong blindness or at best to impaired vision.

In bathing the eyes always use different pieces of cotton or gauze for each eye, and in case of any infection use the greatest care not to infect one eye from the other. This infection may be carried by the fingers, the towels, or the cotton used in treating an infected eye, and is extremely contagious.

The newborn baby's skin is covered with a cheeselike substance, which is the more readily removed if it is first covered with albolene or vaseline. The baby may then be wrapped warmly and put in a safe place until the mother has been attended to, after which the baby may be bathed. The water should be of a temperature that feels comfortable to the bare elbow of the nurse. After the skin is thoroughly but very gently washed, using Castile soap and taking every care not to get soap into the eyes, it should be patted dry with warm and very soft old towels. The navel dressing is made by covering it with a pad of sterile gauze, which has a hole for the cord, holding it in place with the flannel binder already prepared. Unless this dressing becomes wet or soiled it is not necessary to change

it for a few days. The stump of the cord will usually shrivel and fall off within a week. After this happens the navel will be dressed in the same manner until it is entirely healed.

Within 6 to 12 hours after delivery the mother will be sufficiently rested to give the baby the breast. If in the meantime the baby is restless, it may be given a few drops of warm water from a medicine dropper. The water should contain neither sugar nor any sort of medicine. At this period four nursings in 24 hours will be enough. An infant should sleep 20 out of the 24 hours until it is about 2 months old.

The second bulletin of this series, *Infant Care*, now ready for distribution, gives directions for the care of the baby to the end of the second year.

LYING-IN PERIOD.

This is the name given to the time immediately following childbirth, which is occupied with the establishment of maternal nursing and the restoration of the special organs to the condition they were in before pregnancy. The involution of the uterus is the most important of these changes. By this process the uterus dwindles in weight from about 2 pounds to about 2 ounces and sinks down in the pelvic cavity until it resumes its original position. The length of time required for these changes to take place is shorter with nursing than with non-nursing mothers, but the process of complete involution commonly takes five or six weeks. If lacerations or other accidents of childbirth have occurred, the time may be longer. It is plain, then, that the mother, no matter how well she may feel, needs a certain time of rest before she is capable of taking up her ordinary occupations and pleasures, which, if indulged in too early, may result in retarding or stopping altogether the natural restorative processes. Most women are able to sit up in a chair for an hour on the tenth day; they may be walking about the room usually after two weeks and by the end of a month be able to go up and down stairs, but in all cases it is well for the mother to refrain from full activity for six weeks. At the end of this period the doctor should make a final examination to be sure that all is at it should be, and direct the proper treatment in case anything is amiss.

The lochia, as the characteristic vaginal discharge of this period is called, is at first pure blood, but later becomes quite brown in color. The discharge will last for some time after the birth of the child, and is apt to increase somewhat as the mother gets about. This is an additional reason for prolonging the period of quiet and rest after childbirth. While women do not usually menstruate during lactation, hospital records show that this occurs in about one-third of the nursing mothers within two months. If this happens, it will be a wise precaution to rest in bed when the time comes for the

next period. This may retard the reappearance of the flow and protect against another conception. If pregnancy should, however, recur, the baby will have to be weaned.

NURSING THE BABY.

To nurse her baby is the first duty of every mother.

Mother's milk is composed of 87 parts of water and 13 parts of solids, these latter being fats, sugar, proteids, and salts. The cream of the milk contains its fat; the lactose is its sugar; and the proteid is the curd of the milk. All these are essential to the proper nourishment of the child. The fat is needed to build up the fatty tissues of the body and to produce body heat and energy; the sugar serves similar purposes; the proteids are of very great importance, their use being to build up the cells which compose the blood, the muscles, and all the tissues of the body; the salts are needed chiefly for the bones and the blood; while the water holds the food in a condition of solution or minute subdivision so that it may be digested and assimilated and helps the work of the excretory organs. Now, although it is quite possible to modify cow's milk in such a way that the proportions of fat, sugar, proteid, and water are not widely different from those in human milk, the latter has other qualities which can not be reproduced by any imitation, no matter how cunningly devised. No one knows just in what state the milk goes from the breast of the mother into the stomach of the babe, but such milk is perfectly adapted to the purpose which it serves. *Mother's milk is the one perfect infant food.*

It behooves all mothers who desire healthy and happy babies to nurse them. Not only does the mother's milk give the baby the help he must have in the complicated and difficult task of growing, but it renders him to a considerable extent immune to illnesses of many sorts and greatly increases his chances for life itself. Besides it is easier to nurse the baby than to feed him otherwise. To make bottle feeding safe requires scrupulous and constant care. To secure a supply of pure milk; to keep it at the proper temperature; to have it properly prepared for the baby's use; to change the composition of the milk in accordance with the baby's changing needs; to keep all the utensils used in the care and preparation of the baby's feedings absolutely clean; to have the bottles and nipples scrubbed and sterilized constantly entails upon the mother unremitting attention—attention which is sometimes intrusted to the responsibility of ignorant and careless nursemaids—even when the baby is thriving. But when, as is often the case, the baby does not thrive, the difficulties of artificial feeding are greatly multiplied. Too often do we see babies whose first six or twelve months have been passed in a series of unfortunate feeding experiments, with the result that the growth of

organs, the functions, and general development have been appreciably retarded.

It is true, no doubt, that not all mothers can nurse their babies, even when they would gladly do so. But the cases in which maternal nursing is really impossible are very rare. It is the manifest duty of every doctor, nurse, or other attendant upon a mother in confinement to insist that the mother shall exercise this function; to do everything possible to establish lactation; to promote it and even to bring it back, if for any reason the breasts have ceased to secrete.

From 48 to 60 hours elapse after the birth of a child before the mother's milk "comes." During this period the baby needs no food, but it may be given a few drops of slightly warmed water, now and then, and should be put to breast every six hours, beginning some hours after birth, when the mother has somewhat recovered from the fatigue of labor. The first secretion of the breasts, called the colostrum, serves some useful purpose to the baby, but the principal value of this early nursing is in the training it gives both mother and babe in the habit of nursing. After the milk comes there may be an excessive supply for a few days, until the relation between supply and demand is established. If an overdistention of the breasts occurs, the excess milk may be removed by the use of a breast pump, if it seems absolutely necessary, or by gentle massage of the breast, using warm oil on the hands. But since all manipulation of the breasts only stimulates the gland to greater activity, it is better to try to relieve the discomfort in other ways. A bandage, properly made, is valuable, but requires professional skill for its successful use. Hot or cold applications, according to the weather and the patient's preference, may help. Only the gentlest methods can be employed, and usually nature will soon take care of the excess of milk.

The greatest care must be exercised to keep the nipples in good condition. They should be washed with boric acid or clean water after each nursing, thoroughly dried, and, in general, should be kept as clean and dry as possible. They may crack as a result of the efforts of the baby to nurse, and if this happens a nipple shield, either rubber or glass, should be used until the abrasions are healed, for if the baby's mouth comes into contact with the sore nipple, infection may result which may lead to a breast abscess—a very painful affliction, and one which often requires surgical treatment. Cracked nipples are also caused by allowing the baby to nurse too long at a time or at irregular intervals, so that the nipples are wet and irritated much of the time.

From the first nursing an effort must be made to secure regularity in the nursing of the baby. Before the milk comes, as has been said, the baby may have the breast about once in six hours; after that the

interval may be made once in two, or once in three or four hours, as the case demands, or as the doctor directs. The tendency is to lengthen the intervals between nursings. The question as to whether the baby is getting enough food may be determined by weighing the baby at the end of every week or oftener. At first there will probably be a slight loss; after that there should be a steady gain in weight. If the baby cries a good deal or does not gain properly, it may be that the mother's milk is deficient in some particular, and it will be well to confer with a physician. She should never give up the attempt to nurse the baby, however, unless under exceptional circumstances and with competent advice. Even the smallest amount of maternal milk is worth while to the baby, and if only one or two nursings a day can be had, it is much better than nothing, especially through the first three months, which is far the most critical period of life. The attempt to nurse the baby will stimulate the flow of milk and this, with proper care of the mother's diet and general health, will often serve to establish this function, even when it seems almost hopeless. Meanwhile, the baby's food must be supplemented by cow's milk properly modified.

DIET FOR A NURSING MOTHER.

The diet for a nursing mother will, under ordinary circumstances, be the same as that prescribed during pregnancy; that is, it must be nutritious, laxative, and appetizing. She may follow her own wishes as to the choice of her food. The old idea that acid fruits and vegetables give the baby colic is probably not true, since all acids are changed in the process of the mother's digestion. However, if they or any other food or drink disturb the mother's digestion this may have an unfavorable effect upon the milk. It is necessary, therefore, to watch the diet very carefully and eliminate all articles that actually show themselves to be unsuited to the mother. If, in addition, a woman eats slowly, chews her food thoroughly, and, above all, refrains from worry there will be no reason to suppose that the maternal milk will not agree with the baby. Constipation should be guarded against as carefully during the period of lactation as during pregnancy.

If the milk is scanty, the need for a more generous diet is indicated. Plenty of fresh milk, eggs, fresh vegetables, ripe fruit, and other plain, simple food are required. If the appetite is capricious, it will be well to eat lightly five or six times a day. It is necessary to reiterate the importance of a quiet state of mind for all nursing mothers. There is no one thing which more certainly and completely interferes with the secretion of the milk than any overwrought, nervous condition, and although in the presence of grave

causes for worry or sorrow it seems sometimes almost impossible to be self-controlled, the thought that the little life, perhaps, is dependent upon it will serve to give the mother the strength required. The mother should have pleasant exercise, out-of-door life, pleasure, cheerful society, and be surrounded as far as possible with the things that interest her. She should strive to have at least eight hours of sleep at night, and, if her rest is broken then, to make it up during the day when the baby sleeps. Plenty of fresh air and sunshine are always desirable.

There is usually a period after the nurse has gone and the mother is left to herself when the weariness resulting from her own somewhat feeble health, broken sleep, and the worry consequent upon taking care of the baby alone causes the milk to diminish in quantity. It is at this time that many a mother concludes that the baby is starving and is very apt to become discouraged and give up nursing as hopeless. This is a great mistake. It is usually true that the strain of this period is relieved, day by day, as mother and babe gradually become adjusted; her health revives and slowly but certainly things will grow more comfortable, and with this will come the milk. So that if the mother will only strive to carry herself and the baby past this epoch she will in all likelihood be able to nurse the baby quite successfully. At least every possible means to this end should be tried before weaning is resorted to. The return of the menstrual periods is not a sufficient reason for weaning, but pregnancy demands it, as the mother's strength will hardly be sufficient for this additional strain.

BIRTH REGISTRATION.

SEE THAT THE BIRTH OF YOUR BABY IS REGISTERED.

It may sometime be of the utmost importance to your child that there be in existence an accurate, legal record of his birth and parentage. It would be well to ask the doctor to make sure that your baby's birth is properly registered, or go to the register's office yourself and see that the record is made. It is suggested that a memorandum be made below of certain facts recorded in the birth certificate.

For further information concerning the subject of birth registration, write the Children's Bureau, Department of Labor, Washington, D. C.

Baby's name.....

Father's name.....

Mother's maiden name.....

Sex of baby

If twin or triplet, give number in order of birth.....

Date of baby's birth.....

(Month.)

(Day.)

(Year.)

Birthplace:

City, town, or village.....

County.....

State

Attending physician:

Name

Address.....

Baby's registered number.....

GLOSSARY.

- Abnormal.**—Irregular; deviating from the standard.
- Abortion.**—The expulsion of the embryo during the first four months of pregnancy.
- Afterbirth.**—The mass of tissue expelled from the uterus after the birth.
- Afterpains.**—The pains which accompany the involution of the uterus.
- Anatomy.**—The science which deals with the structure of the body.
- Anemia.**—A deficiency of some of the constituents of the blood.
- Anesthetic.**—A substance capable of producing temporary loss of feeling.
- Antiseptic.**—Preventing or counteracting decay.
- Asepsis.**—Surgical cleanliness; freedom from disease germs.
- Assimilation.**—The process by which living creatures absorb nutriment, so that it becomes a part of their substance.
- Bacteria.**—Extremely minute cells, some of which are capable of producing disease.
- Birth canal.**—The passage through which the child enters the world. It consists of the uterus and vagina, and is surrounded by the pelvic bones.
- Bladder.**—A thin, distensible sack acting as a reservoir for the urine between the time it is secreted by the kidneys and leaves the body.
- Cell.**—One of the microscopic units composing the tissues of the body.
- Confinement.**—Childbirth; labor.
- Constipation.**—Inactivity of the bowels.
- Delivery.**—The birth of the child.
- Dietetic.**—Pertaining to the diet.
- Dilatation.**—Expansion or spreading.
- Duct.**—A tube which conveys a secretion from the gland.
- Embryo.**—The offspring before it assumes the form and structure of the parent.
- Enema.**—Fluid injected into the rectum.
- Eruclation.**—The belching of wind from the stomach.
- Evacuate.**—To empty.
- Excretion.**—The process of throwing off waste products from the body.
- Excretory organs.**—The organs concerned in throwing off the waste products of the body. The lungs, skin, bowels, and kidneys.
- Fetus.**—The unborn child after the third month of development.
- Flatulence.**—The distention of the stomach and intestines with the gases that arise from indigestion.
- Function.**—The specific work of an organ.
- Germinal cells.**—The original unit cells from which the new structure takes its start. The germinal cell contributed by a mother is called an ovum; that given by the father is called a spermatozoon.
- Gestation.**—Pregnancy.
- Gland.**—An organ which separates certain substances from the blood and pours out a material, usually fluid, peculiar to itself.
- Hygiene.**—That department of medical knowledge which relates to the preservation of health; sanitary science.

- Infection.**—The communication of disease by contact with anything carrying disease germs.
- Intestine.**—The bowel; the long membranous tube extending from the stomach to the rectum.
- Involution.**—The process by which the uterus returns to its original size, shape, and position after childbirth.
- Laceration.**—A ragged wound. Tearing of the perineum at childbirth.
- Lactation.**—The secretion of mother's milk.
- Laxative.**—Whatever relaxes the bowel and relieves constipation.
- Ligature.**—Anything that is used for tying a blood vessel.
- Mastication.**—The act of chewing.
- Menstruation.**—The monthly flow in females.
- Miscarriage.**—The termination of pregnancy prior to the seventh month.
- Mucous membrane.**—The lining of the alimentary canal and other cavities of the body.
- Mucus.**—The secretion of a mucous membrane.
- Nausea.**—Sickness at the stomach.
- Navel.**—The point in the abdomen where the umbilical cord was attached.
- Nucleus.**—The point in any cell that is its center of life.
- Nutritment.**—Nutrition. Food.
- Obstetrics.**—That branch of medical science which deals with the care and treatment of women during pregnancy and childbirth.
- Ovary.**—The organ which contains the egg cells or ova.
- Oviducts.**—The tubes which lead from the ovaries to the uterus.
- Ovum.**—An egg; the germinal cell contributed by the mother.
- Pathology.**—That branch of medical science that deals with diseased conditions, their causes, nature, treatment, etc.
- Pelvis.**—The bony cavity formed chiefly by the hip bones.
- Physiology.**—The science which deals with the functions of cells, tissues, and organs.
- Placenta.**—An organ through which communication between the mother and the child in the uterus is accomplished. One of its surfaces is attached to the wall of the uterus; the umbilical cord is attached at about the middle point of the other surface.
- Pregnancy.**—Being with child; gestation; being "in the family way."
- Prenatal.**—Pertaining to the period of pregnancy; before childbirth.
- Purgative.**—Capable of moving the bowels.
- Regurgitation.**—The rising of some of the contents of the stomach into the mouth.
- Secretion.**—The substance taken out of the blood by a gland.
- Sediment.**—The materials that settle to the bottom when liquids are allowed to stand.
- Sterilize.**—To render free from living germs.
- Term.**—The expected date of delivery or childbirth.
- Tissue.**—The elementary cells of which the body is composed, as bony "tissue," muscular "tissue," etc.
- Toxemia.**—Blood poisoning.
- Umbilical cord.**—The tube which carries the blood between the placenta and the navel of the child in the uterus.
- Uterus.**—The womb; a hollow muscular organ designed to receive, protect, nourish, and finally expel the product of conception.
- Vagina.**—The canal through which the child passes from the uterus into the outside world.
- Womb.**—The uterus. The organ which shelters the unborn baby.

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